TELEPHONE SYSTEM WITH STIMULUS OPERATION OR DEFAULT OPERATION

BACKGROUND OF THE INVENTION

This invention generally relates to a telephone system and, more particularly, to a telephone system in which a plurality of telephone terminal apparatuses are coupled, via local telephone lines, to a main apparatus with a stimulus operation or a default operation. This invention also relates to a telephone terminal apparatus which is adapted for use in the above telephone system and is equipped, for example, with a display device for presenting various auxiliary information about operation to a user.

Recently, telephone terminal apparatuses provided with various telephone service functions have recently been developed for use as key telephones or the like, in the above telephone system with a stimulus operation. Telephone terminal apparatuses for use in this type of telephone system are typically capable of displaying various types of message information, supplied from a main apparatus, on a display device. In general, the main apparatus controls where on the display the message information should be displayed.

That is, the main apparatus supplies message information and display position control information to a telephone terminal apparatus, which in turn simply displays the message information on the display device, in accordance with the received display position control information. Every time a new telephone terminal apparatus is coupled to the main apparatus, it is necessary to introduce additional control software into, or else modify the existing software in the main apparatus, so that the new terminal apparatus can operate. An undesirable increase in the amount of software is inevitable, and the telephone system and its operation are complex.

There is now demand from users that a feature be added to telephone terminal apparatuses to permit users to modify, as desired, the conventional layout of message information displayed on the display device of the terminal apparatus. Fulfilling this and other customer demands inevitably increases software for the main apparatus, and consequently increases the work load thereof.

The above description discusses the problem concerned with only the display control (character display) of message information. If the control of other operation auxiliary information, such as tone output and lamp display, were also included, therefore, the aforementioned problem would become even more prominent.

As should be clear from the above description, according to conventional telephone systems with a stimulus operation, the main apparatus coupled to telephone terminal apparatuses is responsible for executing operational control, including display control for displaying various types of message information on the display devices associated with the telephone terminal apparatuses. This type of control may require more software for the main apparatus, and the main apparatus must perform more control.

The telephone system to which this invention relates differs from a system which provides a standardized interface between a main apparatus and a telephone terminal apparatus coupled via a general telephone line by an ISDN (Integrated Services Digital Network). In other words, this invention relates to a telephone system in which telephone terminal apparatuses are connected to a main apparatus by a local line, not by a general-propose line, and which can perform a stimulus operation or a default operation.

SUMMARY OF THE INVENTION

It is therefore an object of the present invention to provide a new and improved telephone system with a stimulus operation or a default operation which provides a telephone terminal apparatus with greater freedom to control operational information without increasing software for a main apparatus and the work load thereof.

Another object of this invention is to provide a telephone terminal apparatus which can easily meet various user demands concerning operational information that includes control of the display layout, for example, of message information without increasing software for a main apparatus and the work load thereof.

According to one aspect of the present invention, there is provided a telephone system with a stimulus operation or a default operation, the system comprising:

a main apparatus for transmitting auxiliary information, which is concerned with telephone communications and includes at least, an information attribute and an information entity; and

a telephone terminal apparatus, coupled to the main apparatus via a local telephone line, having means for controlling the auxiliary information supplied from the main apparatus, the controlling means being able to register a predetermined mode corresponding to the auxiliary information in the telephone terminal apparatus.

The telephone terminal apparatus of the system can perform a functional mode even during a stimulus operation, and can perform a default operation in response to the command from the main apparatus without adding the functional mode.

For example, this invention overcomes the aforementioned problem by:

(1) permitting the positions on a display device where message information is displayed to be settable for each telephone terminal apparatus based on information entered via a key input section,

(2) giving attribute information to the message information entered over a communication path, and

(3) attaining the position set on the display device for displaying the message information in accordance with the attribute information when the message information together with the attribute information are input over the communication path, and displaying the message information on that position.

According to this invention, for example, where to display message information or the message layout can be set for each telephone terminal apparatus so that many user demands can effectively be met. Further, when the main apparatus at the time of outputting message information outputs its attribute information, the telephone terminal apparatus displays the message information in the set layout in accordance with the attribute information. This eliminates the need for the main apparatus to individually control telephone terminal apparatuses. As a result, the amount of the necessary software in the main apparatus need not be increased and the work load of the main apparatus can significantly be reduced.